



Montana Department of  
**ENVIRONMENTAL QUALITY**  
WATER PROTECTION BUREAU

**RECEIVED**

FEB 05 2009

PERMITTING DEQ/WPB & COMPLIANCE DIV.

Agency Use

Permit No.:

Date Rec'd 2/5/09

Amount Rec'd  $\phi$

Check No.

Rec'd By bs

FORM  
**NMP**

**Nutrient Management Plan**

**READ THIS BEFORE COMPLETING FORM:** Before completing this form (Form NMP), Concentrated Animal Feeding Operation (CAFO) operators need to read the General Permit, particularly Part IV.A. CAFO operators also need to read the "Instructions For Filling Out Form NMP," found at the back of the Form. Form NMP is intended to help CAFO operators develop a site-specific Nutrient Management Plan, in compliance with Part IV.A of the General Permit and all applicable State rules and statutes. Your Nutrient Management Plan must be maintained at the site as required in Part III of the General Permit. Sections B and C on your Form NMP must state the information exactly the same way as it was stated on the most recently submitted version of your Form 2B. Attach additional pages as necessary, indicating the corresponding section number on this NMP form. For additional help in filling out this form please read the attached instructions. The 2008 General Permit, current fee schedule, and related forms are available from the Water Protection Bureau at (406) 444-3080 or <http://www.deq.mt.gov/wqinfo/MPDES/CAFO.asp>

**Section A - NMP Status (Check one):**

- ☐ New No prior NMP submitted for this site.  
☐ Modification Change or update to existing NMP.

Permit Number: MT G 010157 (Specify the permit number that was previously assigned to your facility.)

**Section B - Facility or Site Information:**

Site Name Birch Creek Colony

Site Location 900 Birch Creek Colony Road

Nearest City or Town Valier

County Pondera

**Section C - Applicant (Owner/Operator) Information:**

Owner or Operator Name William Kleinsasser

Mailing Address \_\_\_\_\_

City, State, and Zip Code \_\_\_\_\_

Phone Number 406-279-3586

## Section D - NMP Minimum Elements:

### 1. Livestock Statistics

Animal Type	# of Days on Site (per Year)	Annual Manure Production (cubic yds or gal)
Sow & litter	Jan Early - Dec Late	9,752,790
Sow & litter	Jan Early - Dec Late	3,374
Gestating sow	Jan Early - Dec Early	9,752,790
Gestating sow	Jan Early - Dec Early	3,374
Boar	Jan Early - Dec Late	9,752,790
Boar	Jan Early - Dec Late	3,374
Nursery pig	Jan Early - Dec Late	9,752,790
Nursery pig	Jan Early - Dec Late	3,374
Wean-to-finish pig	Jan Early - Dec Late	9,752,790
Wean-to-finish pig	Jan Early - Dec Late	3,374
Grow-finish pig	Jan Early - Dec Early	9,752,790
Grow-finish pig	Jan Early - Dec Early	3,374
Milk cow (dairy)	Jan Early - Dec Late	9,752,790
Milk cow (dairy)	Jan Early - Dec Late	3,374
Brood cow/heifer (beef)	Jan Early - Dec Early	9,752,790
Brood cow/heifer (beef)	Jan Early - Dec Early	3,374
Calf (dairy)	Jan Early - Dec Late	9,752,790
Calf (dairy)	Jan Early - Dec Late	3,374
Dry cow (dairy)	Jan Early - Dec Late	9,752,790
Dry cow (dairy)	Jan Early - Dec Late	3,374
Weaned heifer/steer (dairy)	Jan Early - Dec Late	9,752,790
Weaned heifer/steer (dairy)	Jan Early - Dec Late	3,374
Growing heifer/steer (dairy)	Jan Early - Dec Late	9,752,790
Growing heifer/steer (dairy)	Jan Early - Dec Late	3,374
Layer	Jan Early - Dec Late	9,752,790
Layer	Jan Early - Dec Late	3,374
Layer	Jan Early - Dec Late	9,752,790
Layer	Jan Early - Dec Late	3,374
Broiler	Jan Early - Dec Late	9,752,790
Broiler	Jan Early - Dec Late	3,374
Duck	Apr Early - Jun Late	9,752,790
Duck	Apr Early - Jun Late	3,374
Duck	Apr Early - Jul Early	9,752,790
Duck	Apr Early - Jul Early	3,374
Turkey tom	Jun Early - Nov Late	9,752,790
Turkey tom	Jun Early - Nov Late	3,374
Brood cow/heifer (beef)	Jan Late - May Early	9,752,790
Brood cow/heifer (beef)	Jan Late - May Early	3,374
Suckling calf (beef)	Jan Late - May Early	9,752,790
Suckling calf (beef)	Jan Late - May Early	3,374

Values are annual and cumulative, based on measured previous year applications and documented by NRCS using Purdue Universities Manure Management Planner program, as part of an Approved CNMP

## 2. Manure Handling

Describe manure handling at the facility:

**Manure is held temporarily in storage tanks, and open lots until it can be transported to the designated holding facility identified on the facility map, based on solid or liquid storage. NRCS has designed an upgrade to the previous system for storage and handling, which is scheduled for implementation in 2009. Current Storage and handling methods meet DEQ - 9 criteria.**

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Frequency of Manure Removal from confinement areas:

**Manure is removed from the holding facilities in the spring, summer and fall. Liquid manure is hauled to the field using a slurry tanker. Applications occur before planting, and post harvest to draw down the storage ponds. Solids collected all year and spread in the fall.**

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Is this manure temporarily stored in any location other than the confinement area? ☐ Yes ☒ No  
If so then how and where? 

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Is manure stored on impervious surface? ☐ Yes ☒ No

If yes, describe type and characteristics of this surface: 

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**3. Waste Control Structures**

<i>Waste Control Structure (name/type)</i>	<i>Length (ft)</i>	<i>Width (ft)</i>	<i>Depth (ft)</i>	<i>Volume (cubic ft or gallons)</i>
1. Waste Storage Pond	450	200	10	5,000,000 gallons
2. Concrete underground storage	150	85	20	1,814,000 gallons
3. Open lots	400	325	1	3500 tons
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				

#### **4. Disposal of Dead Animals**

Describe how dead animals are disposed of at this facility:

**A trench is dug 6 feet deep and mortalities are covered within 36 hours ( See NRCS Site Plan for Location)**

#### **5. Clean Water Diversion Practices**

Describe how clean water is diverted from production area:

**All clean water is diverted from entering the holding the facility using diversions (See NRCS developed Facility Site Plan, for extents and locations of diversions, pipelines, settling basins, Gutters and settling ponds, These practices will be installed and completed by fall of 2009.**

**6. Prohibiting Animals and Wastes from Contact with State Waters**

Describe how animals and wastes are prohibited from direct contact with state waters:

**Fences are used to exclude all confined animals from access to state Waters (See NRCS Site Plan)**

**7. Chemicals and Contaminants**

Describe how chemicals and other contaminants are handled on-site:

**Chemicals are stored inside fully enclosed concrete bottom buildings that have no runoff potential.**

**See facilities map**

### **8. Best Management Practice (BMPS)**

Describe in detail all temporary, permanent and structural Best Management Practices (BMPs) which will be used to control runoff of pollutants from facility's **production area**. Indicate the location of these measures. Include a schedule for implementation of each of these measures. Examples of BMP measures could include but are not limited to: constructing ditches, terraces, and waterways above an open lot to divert clean water run on; installing gutters, downspouts and buried conduits to divert roof drainage; providing more roofed area; decreasing open lot surface area; repairing or adjusting water systems to minimize water wastage; using practical amounts of water for cooling purposes; recycling water if practical and applicable.

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**See NRCS Site plan for facility based BMP practices which are being implemented with the EQIP Farm Program.**

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**See Field Application map for setbacks by field number.**

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**Practices include: Manure transfer pipelines from facility to Solid Waste Separator and from separator to Holding Pond. A runoff delivery diversion and settling basin from outside lots. Gutters are being installed to reduce clean water runoff through the facility. A fence to control access to manure holding facilities. A concrete dry stacking facility to hold solid waste produced by the separator and poultry litter during winter months. Six months of manure storage has been designed for the facility. Setbacks to control field based application runoff and irrigation ditch contamination, has been incorporated into the 13 fields that will receive manure applications. ALL BMPs will be installed by fall of 2009.**

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Describe in detail all temporary, permanent and structural Best Management Practices (BMPs) which will be used to control runoff of pollutants from facility's **land application area**. Indicate the location of these practices. If not already in use, include a schedule for implementation of each of these measures. Attached details and specifications may be used to supplement this description. Examples of BMP measures could include but are not limited to: maintaining setbacks from surface waters for manure applications; managing irrigation practices to prevent ponding of wastewater on land application sites; never spray irrigating wastes onto frozen ground; consulting with the Department prior to applying any liquid waste to frozen or snow-covered ground; applying wastes at agronomic rates.

Plant sampling/tissue analysis	yes/no	Rotational grazing	yes/no
Conservation or reduced tillage	yes/no	Manure injection or incorporation	yes/no
Terraces or other water control structures	yes/no	Contour plantings	yes/no
Riparian buffers or vegetative filter strips	yes/no	Winter "scavenger" or cover crops	yes/no

Other examples:

**Nutrient Management, Pest Management, and Conservation Tillage are all currently being implemented.**

## 9. Implementation, Operation, Maintenance and Record Keeping – Guidance

The permittee is required to develop guidance addressing implementation of NMP, proper operation and maintenance of the facility, and record keeping as described in Part II of the permit.

Has a guidance document been developed for the facility? XX ☐ Yes ☐ No

Certify the document addresses the following requirements:

Implementation of the NMP:	XX <input type="checkbox"/> Yes	<input type="checkbox"/> No
Facility operation and maintenance:	XX <input type="checkbox"/> Yes	<input type="checkbox"/> No
Record keeping and reporting:	XX <input type="checkbox"/> Yes	<input type="checkbox"/> No
Sample collection and analysis:	XX <input type="checkbox"/> Yes	<input type="checkbox"/> No
Manure transfer:	XX <input type="checkbox"/> Yes	<input type="checkbox"/> No

Provide name, date and location of most recent documentation:

**In 2007 NRCS developed a CNMP which includes all the above information dated 9-3-07. Soil tests are completed each year for fields that receive manure using Agvise labs, most recently (10-13-08). Manure Analysis is completed annually by CHS and SureTech Labs, most recently (12-9-08). All documentation is maintained at the facility.**

If your answer to any of the above question is no, provide explanation



### **Section E – Land Application**

Will manure be land applied to land either owned, rented, or leased by the owner or operator of the facility?

☐ No If no, then provide an explanation of how animal waste at this site are managed.

XX ☐ Yes If yes, then the information requested in Section E must be provided.

**This is a Narrative based Nutrient Management Plan. Liquid and solid manure is applied to one ore more of 14 fields. Liquid manure is applied using 2 pivots and 1 slurry tanker. Manure is applied to the following 3 crops, Wheat, Barley and Alfalfa/Grass. These are the only crops which receive manure applications. An example for each crop is provided below. These are representative of the process used for all fields.**

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### **Photos and/or Maps**

Attach an aerial photograph or map of the site where manure is to be applied. (Use multiple photos/maps if necessary to show required details.) The photo(s)/map(s) must be printed on no larger than an 11"x17" piece of paper, and must clearly identify the following items:

- Individual field boundaries for all planned land application areas
- A name, number, letter or other means of identifying each individual land application field
- The location of any down-gradient surface waters
- The location of any down-gradient open tile line intake structures
- The location of any down-gradient sinkholes
- The location of any down-gradient agricultural well heads
- The location of all conduits to surface waters
- The specific manure/waste handling or nutrient management restrictions associated with each land application field.
- The soil type(s) present and their locations within the individual land application field(s)
- The location of buffers and setbacks around state surface waters, well heads, etc.

### **Land Application Equipment Calibration**

Describe the type of equipment used to land apply wastes and the calibrating procedures:

**One 6000 gallon slurry tanker is used for liquid applications and 2 pivots apply liquid waste directly from the Waste Storage Pond. Pivot application rates average 6788 gallons/acre. A 13 ton manure spreader truck is used for solids. The slurry tanker and manure spreader is calibrated using application width by distance covered and adjusting for speed to meet the desired rate. The maximum rate per field is calculated by soil test and manure analysis.**

### **Manure Sampling and Analysis Procedures**

A representative manure sample will be analyzed a minimum of once annually for Total Nitrogen, and Total Phosphorus. Analysis results will be reported in lbs/ton or lbs/1,000 gal. Results of these analyses will be used in determining application rates for manure, litter, and process wastewater.

Manure Sample collection will occur according to the following method:

XX ☐ The recommended method(s) found in Section 5 of Department Circular DEQ 9

☐ Other (describe) \_\_\_\_\_

### **Soil Sampling and Analysis Procedures**

A representative soil sample from the top 6 inch layer of soil in each field will be analyzed for phosphorus content at least once every five years. Analyses will be conducted by a qualified laboratory, using the Olsen P test. Results will be reported in parts per million (ppm) and will be used in determining application rates for manure, litter, and process wastewater.

Soil sample collection will occur according to the following method:

XX ☐ The recommended method(s) found in Section 5 of Department Circular DEQ 9

☐ Other (describe) \_\_\_\_\_

**Land Application Data-Narrative approach**

The following must be filled out for each field to which manure, litter or process wastewater will or may be applied for the period of the permit (5 years). Use as many sheets as necessary to fulfill this requirement. **Fields with identical crops and soil types may be grouped together.**

**Crops and Manure**

**Field Name and spreadable acres for each (for fields with identical crops and soils type):**

**This is a Narrative based Nutrient Management Plan. Birch Creek Colony has 2122 spreadable acres.**

**Three crops have been identified for application of manure. There are 14 fields associated with this plan.**

**The following scenarios demonstrate the system utilized for all manure applications**

<b>Crop 1</b>	<b>Field 4</b>	Winter Wheat
Irrigated (Y/N)		Yes
Yield Goal (ton/ac or bushel/ac)		100 Bushels
N Content of soil as nitrate (lbs/acre or ppm)		52 lbs 0-24"
P Content of soil as P <sub>2</sub> O <sub>5</sub> (lbs/acre or ppm)		122 PPM
Time of Year When Application will Occur (month)		Growing Season
Application frequency (per year by month)		1 application
Form of manure (liquid/solid)		Liquid
Method of Application		Pivot
Is manure incorporated or broadcast?		Broadcast
Frequency of Application (yearly, biannual, etc.?)		Yearly
<b>Crop 2</b>	<b>Field 8</b>	Barley
Irrigated (Y/N)		Yes
Yield Goal (ton/ac or bushel/ac)		100 Bushels
N Content of soil as Nitrate (lbs/acre or ppm)		30 lbs 0-24"
P Content of soil as P <sub>2</sub> O <sub>5</sub> (lbs/acre or ppm)		42 PPM
Time of Year When Application will Occur (month)		Spring
Application frequency (per year, by month)		1 application
Form of manure (liquid/solid)		Solid
Method of Application		Manure Spreader
Is manure broadcast, injected or incorporated?		Incorporated within 3 days
Frequency of Application (Annual, Biannual, etc?)		1 application every 2 years

<b>Crop 2</b>	<b>Field 11</b>	Alfalfa/Grass
		80/20
Irrigated (Y/N)		Yes
Yield Goal (ton/ac or bushel/ac)		4 tons
N Content of soil as Nitrate (lbs/acre or ppm)		3 lbs 0-6"
P Content of soil as P <sub>2</sub> O <sub>5</sub> (lbs/acre or ppm)		40 PPM
Time of Year When Application will Occur (month)		Spring
Application frequency (per year, by month)		1 application
Form of manure (liquid/solid)		Liquid
Method of Application		Slurry Tanker
Is manure broadcast, injected or incorporated?		Broadcast
Frequency of Application (Annual, Biannual, etc?)		1 application every 2 years

### Phosphorus Risk Assessment

The permittee shall assess the risk of phosphorus contamination of state waters. An assessment shall be conducted for each field, under the control of the operator, to which manure, litter or process wastewater will or may be applied. If a new field is added in the future, then the permittee must submit a revised (modified) NMP. The permittee has the option of using either Method A or Method B (below) to complete the assessment. Copies of all tables and calculations used to complete the assessments, as well as the results of the assessments, shall be submitted to the Department and copies shall be maintained on-site at the facility and available for Departmental review. The results of the assessments shall be used to determine the appropriate basis for land application of wastes from the facility.

### Method Used

Indicate which method will be used to determine phosphorus application:

XX ☐ Method A – Representative Soil Sample

☐ Method B – Phosphorus Index

### Method A – Representative Soil Sample

- Obtain one or more representative soil sample(s) from the field.
- Have the sample analyzed for Phosphorus by a qualified lab. The "Olsen P test" must be used for the analysis, and the result must be reported in parts per million (ppm).
- Using the results of the Olsen P test, determine the application basis according to the Table below

<b>Soil Test</b>	
<b>Olsen P Soil Test Result (ppm)</b>	<b>Application Basis</b>
<25.0	Nitrogen Needs Of Crop
25.1 - 100.0	Phosphorus Needs Of Crop
100.0 - 150.0	Phosphorus Needs up to Crop Removal Rate
>150.0	No Application

**Method B – Phosphorus Index**

- a) Complete a Phosphorus Index according to for each crop grown on each field. Complete table in Appendix A to calculate phosphorus index. For information on filling out specific sections Appendix A, please refer to Attachment 2 of Department Circular DEQ 9.
- b) Using the calculated Total Phosphorus Index Value, assign the overall site/field vulnerability to phosphorus loss according to the table below.

<b>Total Phosphorus</b>	
<i>Total Phosphorus Index Value</i>	<i>Site Vulnerability to Phosphorus Loss</i>
<11	Low
11-21	Medium
22-43	High
>43	Very High

- c) Using the calculated Site Vulnerability to Phosphorus Loss, determine the appropriate application basis according to the table below.

<b>Site Vulnerability to Phosphorus Loss</b>	
<i>Site Vulnerability to Phosphorus Loss</i>	<i>Application Basis</i>
Low	Nitrogen Needs
Medium	Nitrogen Needs
High	Phosphorus Need Up to Crop Removal
Very High	Phosphorus Crop Removal or No Application

- d) The permittee will complete the *Nutrient Budget Worksheet*, below, for each crop grown on each field to which manure or process waste water is or may be applied during the first year of application. A copy of each Nutrient Budget Worksheet will be maintained on site, and a copy will be submitted to the Department.

<b>Nutrient Budget Worksheet</b>			
<b>Site/Field:</b>		<b>Field 4 Winter Wheat 100 Bushels</b>	
<b>Nutrient Budget</b>		<b>Nitrogen-based Application</b>	<b>Phosphorus-based Application</b>
	Crop Nutrient Needs, lbs/acre included in Department Circular DEQ 9		62 lbs P <sub>2</sub> O <sub>5</sub> Utilized by Crop
(-)	Credits from previous legume crops, lbs/acre (from DEQ-9), as applicable		
(-)	Residuals from past manure production, lbs/acre (lbs/acre applied in previous year(s) x fractions listed in DEQ-9)		
(-)	Nutrients supplied by commercial fertilizer and Biosolids, lbs/acre		
(-)	Nutrients supplied in irrigation water, lbs/acre		
	<b>= Additional Nutrients Needed, lbs/acre</b>		62 lbs Utilized
	Total Nitrogen and Phosphorus in manure, lbs/ton or lbs/1,000 gal (from manure test)		7 lbs/1000 gallons
(x)	Nutrient Availability factor (for Nitrogen based application see DEQ-9, below; for Phosphorus based application use 1.0)		1.0 DEQ-9
	<b>= Available Nutrients in Manure, lbs/ton or lbs/1,000 gal</b>		7 lbs/1000 gallons
	Additional Nutrients needed, lbs/acre (calculated above)		62 lbs P <sub>2</sub> O <sub>5</sub> Utilized
(/)	Available Nutrients in Manure, lbs/ton or lbs/1,000 gal (calculated above)		7 lbs/1000 gallons
	<b>= Manure Application Rate, tons/acre or 1,000 gal/acre</b>		8857 gallons/acre Max Rate

Comments:

The above scenario represents how all Phosphorus based application rates are calculated by field for liquid waste. Thus it represents all similar fields using this manure source. Crop rotation will play an important role in Birch Creek Colonies dry land farming practices. As small grains market change, there will be advantages to alternative crops being planted. Crop rotations will add benefits by breaking disease and insect cycles, utilizing soil moisture on short moisture years; example peas and camelina. New markets may also create financial advantages for Birch Creek Colony. With constantly changing markets, wheat and barley may not always be the best practice; example barley contracts are short this year, forcing a change in historic barley acres to be seeded to either wheat or possibly an alternative

**crop like peas or oil seed crops. However, manure will only be applied to the 3 crops identified in these scenarios. Barley, Wheat and Alfalfa/Grass.**

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<b>Nutrient Budget Worksheet</b>			
<b>Site/Field:</b>		<b>Field 8 Barley 100 Bushels</b>	
<b>Nutrient Budget</b>		<b>Nitrogen-based Application</b>	<b>Phosphorus-based Application</b>
	Crop Nutrient Needs, lbs/acre included in Department Circular DEQ 9		36 lbs P2O5 Utilized by Crop
(-)	Credits from previous legume crops, lbs/acre (from DEQ-9), as applicable		
(-)	Residuals from past manure production, lbs/acre (lbs/acre applied in previous year(s) x fractions listed in DEQ-9)		
(-)	Nutrients supplied by commercial fertilizer and Biosolids, lbs/acre		
(-)	Nutrients supplied in irrigation water, lbs/acre		
	<b>= Additional Nutrients Needed, lbs/acre</b>		36 lbs Utilized
	Total Nitrogen and Phosphorus in manure, lbs/ton or lbs/1,000 gal (from manure test)		7 lbs/1000 gallons
(x)	Nutrient Availability factor (for Nitrogen based application see DEQ-9, below; for Phosphorus based application use 1.0)		1.0 DEQ-9
	<b>= Available Nutrients in Manure, lbs/ton or lbs/1,000 gal</b>		7 lbs/1000 gallons
	Additional Nutrients needed, lbs/acre (calculated above)		36 lbs P2O5 Utilized
(/)	Available Nutrients in Manure, lbs/ton or lbs/1,000 gal (calculated above)		7 lbs/1000 gallons
	<b>= Manure Application Rate, tons/acre or 1,000 gal/acre</b>		5142 gallons/acre Max Rate
Comments:			
<p>The above scenario represents how all Phosphorus based application rates are calculated by field for liquid waste. Thus it represents all similar fields using this manure source. Crop rotation will play an important role in Birch Creek Colonies dry land farming practices. As small grains market change, there will be advantages to alternative crops being planted. Crop rotations will add benefits by breaking disease and insect cycles, utilizing soil moisture on short moisture years; example peas and camelina. New markets may also create financial advantages for Birch Creek Colony. With constantly changing markets, wheat and barley may not always be the best practice; example barley contracts are short this year, forcing a change in historic barley acres to be seeded to either wheat or possibly an alternative crop like peas or oil seed crops. However, manure will only be applied to the 3 crops identified in these scenarios. Barley, Wheat and Alfalfa/Grass.</p>			



**Nutrient Budget Worksheet****Site/Field:** *Field 11 Alfalfa/Grass 80/20 4 tons*

<b>Nutrient Budget</b>		<b>Nitrogen-based Application</b>	<b>Phosphorus-based Application</b>
	Crop Nutrient Needs, lbs/acre included in Department Circular DEQ 9		44 lbs P <sub>2</sub> O <sub>5</sub> Utilized by Crop
(-)	Credits from previous legume crops, lbs/acre (from DEQ-9), as applicable		
(-)	Residuals from past manure production, lbs/acre (lbs/acre applied in previous year(s) x fractions listed in DEQ-9)		
(-)	Nutrients supplied by commercial fertilizer and Biosolids, lbs/acre		
(-)	Nutrients supplied in irrigation water, lbs/acre		
	<b>= Additional Nutrients Needed, lbs/acre</b>		44 lbs Utilized
	Total Nitrogen and Phosphorus in manure, lbs/ton or lbs/1,000 gal (from manure test)		7 lbs/1000 gallons
(x)	Nutrient Availability factor (for Nitrogen based application see DEQ-9, below; for Phosphorus based application use 1.0)		1.0 DEQ-9
	<b>= Available Nutrients in Manure, lbs/ton or lbs/1,000 gal</b>		7 lbs/1000 gallons
	Additional Nutrients needed, lbs/acre (calculated above)		44 lbs P <sub>2</sub> O <sub>5</sub> Utilized
(/)	Available Nutrients in Manure, lbs/ton or lbs/1,000 gal (calculated above)		7 lbs/1000 gallons
	<b>= Manure Application Rate, tons/acre or 1,000 gal/acre</b>		6285 gallons/acre Maximum Rate

Comments:

The above scenario represents how all Phosphorus based application rates are calculated by field for liquid waste. Thus it represents all similar fields using this manure source. Crop rotation will play an important role in Birch Creek Colonies dry land farming practices. As small grains market change, there will be advantages to alternative crops being planted. Crop rotations will add benefits by breaking disease and insect cycles, utilizing soil moisture on short moisture years; example peas and camelina. New markets may also create financial advantages for Birch Creek Colony. With constantly changing markets, wheat and barley may not always be the best practice; example barley contracts are short this year, forcing a change in historic barley acres to be seeded to either wheat or possibly an alternative crop like peas or oil seed crops. However, manure will only be applied to the 3 crops identified in these scenarios. Barley, Wheat and Alfalfa/Grass.

**Section F - CERTIFICATION****Permittee Information:**

This Form NMP must be completed, signed, and certified as follows:

- For a corporation, by a principal officer of at least the level of vice president;
- For a partnership or sole proprietorship, by a general partner or the proprietor, respectively; or
- For a municipality, state, federal, or other public facility, by either a principal executive officer or ranking elected official.

**All Permittees Must Complete the Following Certification:**

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information; including the possibility of fine and imprisonment for knowing violations. [75-5-633, MCA]

**A. Name (Type or Print)**

*Isaac J. Waldner*

**B. Title (Type or Print)**

*President*

**C. Phone No.**

*1-406-279-3586*

**D. Signature**

*Isaac J. Waldner*

**E. Date Signed**

*02-03-2009*

Return the Form NMP, Nutrient Management Plan to:

Department of Environmental Quality  
Water Protection Bureau  
PO Box 200901  
Helena, MT 59620-0901  
(406) 444-3080

**RECEIVED**

**FEB 05 2009**

DEQWPB  
PERMITTING & COMPLIANCE DIV.



Soil Analysis by Agvise Laboratories  
Northwood: (701) 587-6010  
Benson: (320) 843-4109

SUBMITTED FOR:  
BIRCHCREEK

VALIER, MT

## SOIL TEST REPORT

FIELD CNTY E and W WHEEL SAMPLE E and W WHEEL  
TWP Rivet 2 SECTION  
QTR ACRES Barley  
PREV. CROP Barley

CHS-CHOTEAU  
30 2ND AVE NE  
PO BOX 326  
CHOTEAU, MT  
59422

SUBMITTED BY: CE1730

Field 8



COLLECTED BY A  
CHS TECHNICIAN

CUT BANK LOCATION

REF# 11209347  
LAB# 86815  
BOX# 0

Date Sampled: 10/3/2008

Date Received: 10/8/2008

Date Reported: 10/30/2008

				1ST CROP CHOICE				2ND CROP CHOICE				3RD CROP CHOICE			
				Barley-Malting				Barley-Malting				Barley-Malting			
				YIELD GOAL				YIELD GOAL				YIELD GOAL			
				120 BU				40 BU				50 BU			
				SUGGESTED GUIDELINES				SUGGESTED GUIDELINES				SUGGESTED GUIDELINES			
				Broadcast				Band/Maint.				Band/Maint.			
				LB/ACRE		APPLICATION		LB/ACRE		APPLICATION		LB/ACRE		APPLICATION	
				N	126	Customized		N	22	Customized		N	35	Customized	
				P <sub>2</sub> O <sub>5</sub>	15	Band(Starter)*		P <sub>2</sub> O <sub>5</sub>	15	Band(Starter)*		P <sub>2</sub> O <sub>5</sub>	15	Band(Starter)*	
				K <sub>2</sub> O	10	Band(Starter)*		K <sub>2</sub> O	10	Band(Starter)*		K <sub>2</sub> O	10	Band(Starter)*	
				Cl				Cl				Cl			
				S	0			S	0			S	0		
				B				B				B			
				Zn	0			Zn	0			Zn	0		
				Fe				Fe				Fe			
				Mn				Mn				Mn			
				Cu	0			Cu	0			Cu	0		
				Mg				Mg				Mg			
				Lime				Lime				Lime			
				Soil pH		Buffer pH		Cation Exchange Capacity		% Base Saturation (Typical Range)					
										% Ca	% Mg	% K	% Na	% H	
				8.3											

0-6"	9 lb/ac	***					
6-24"	21 lb/ac						
0-24"	30 lb/ac						
Nitrate							
Olsen	42 ppm	****	****	****	****		
Phosphorus							
Potassium	488 ppm	****	****	****	****		
Chloride							
0-6"	32 lb/ac	****	****	****	*		
6-24"	360 +lb/ac	****	****	****	****		
Sulfur							
Boron							
Zinc	5.00 ppm	****	****	****	****		
Iron							
Manganese							
Copper	2.59 ppm	****	****	****	****		
Magnesium							
Calcium							
Sodium							
Org.Matter	3.1 %	****	****	*			
Carbonate(CCE)							
0-6"	0.5 mmho/cm	****	****				
6-24"	2.47 mmho/cm	****	****	****	****		
Sol. Salts							

Crop 1: The nitrogen guideline for this recommendation has been customized by the submitter. \* Caution: Seed Placed Fertilizer Can Cause Injury \* Crop Removal: P2O5 = 56 K2O = 60 AGVISE  
Broadcast guidelines will build P & K test levels to the high range over several years.  
Crop 2: The nitrogen guideline for this recommendation has been customized by the submitter. \* Caution: Seed Placed Fertilizer Can Cause Injury \* Crop Removal: P2O5 = 19 K2O = 20 AGVISE  
Band/Maintenance guidelines will build P & K test levels to the medium range over many years and then maintain them.  
Crop 3: The nitrogen guideline for this recommendation has been customized by the submitter. \* Caution: Seed Placed Fertilizer Can Cause Injury \* Crop Removal: P2O5 = 24 K2O = 25 AGVISE  
Band/Maintenance guidelines will build P & K test levels to the medium range over many years and then maintain them.



Soil Analysis by Agvise Laboratories  
Northwood: (701) 587-6010  
Benson: (320) 843-4109

## SOIL TEST REPORT

FIELD  
CNTY  
TWP  
QTR  
PREV. CROP

HORSE PASTURE SAMPLE H.P.

SECTION  
ACRES

Barley

WW

CHS

COLLECTED BY A  
CHS TECHNICIAN

CUT BANK LOCATION

SUBMITTED FOR:  
BIRCHCREEK

VALIER, MT

SUBMITTED BY:

CE1730

CHS-CHOTEAU  
30 2ND AVE NE  
PO BOX 326  
CHOTEAU, MT  
59422

Field 4

REF# 11209318  
LAB# 48569  
BOX# 0

Date Sampled: 9/5/2008

Date Received: 9/10/2008

Date Reported: 10/13/2008

				1ST CROP CHOICE				2ND CROP CHOICE				3RD CROP CHOICE			
				Wheat-Winter				Wheat-Winter				Wheat-Winter			
				YIELD GOAL				YIELD GOAL				YIELD GOAL			
				30 BU				40 BU				50 BU			
				SUGGESTED GUIDELINES				SUGGESTED GUIDELINES				SUGGESTED GUIDELINES			
				Band/Maint.				Band/Maint.				Band/Maint.			
				LB/ACRE		APPLICATION		LB/ACRE		APPLICATION		LB/ACRE		APPLICATION	
Olsen		122 ppm		****	****	****	****	N	49	Customized		N	52	Customized	
Phosphorus				****	****	****	****	P <sub>2</sub> O <sub>5</sub>	0			P <sub>2</sub> O <sub>5</sub>	0		
Potassium		693 ppm		****	****	****	****	K <sub>2</sub> O	10	Band(Starter)*		K <sub>2</sub> O	10	Band(Starter)*	
Chloride								Cl				Cl			
0-6"		26 lb/ac		****	****	****	****	S	0			S	0		
6-24"		360 +lb/ac		****	****	****	****	B				B			
Sulfur								Zn	0			Zn	0		
Boron								Fe				Fe			
Zinc		2.65 ppm		****	****	****	****	Mn				Mn			
Iron								Cu	0			Cu	0		
Manganese								Mg				Mg			
Copper		1.48 ppm		****	****	****	****	Lime				Lime			
Magnesium								Soil pH    Buffer pH    Cation Exchange Capacity    % Base Saturation (Typical Range)							
Calcium															
Sodium															
Org.Matter		3.7 %		****	****	****	****								
Carbonate(CCE)															
0-6"		0.34 mmho/cm		****	****	****	****								
6-24"		0.89 mmho/cm		****	****	****	****								
Soi. Salts															

# AGVISE

LABORATORIES

Soil Analysis by Agvise Laboratories  
Northwood: (701) 587-6010  
Benson: (320) 843-4109

SUBMITTED FOR:  
BIRCHCREEK

VALIER, MT

## SOIL TEST REPORT

FIELD CNTY  
TWP  
QTR  
PREV. CROP Alfalfa

ALFALFA PIVOT SAMPLE A.P.  
*Field 3*  
SECTION ACRES  
*Alfalfa*

CHS-CHOTEAU  
30 2ND AVE NE  
PO BOX 326  
CHOTEAU, MT  
59422

SUBMITTED BY: *Field 11* CE1730

CHS

COLLECTED BY A  
CHS TECHNICIAN

CUT BANK LOCATION

REF# 11209320  
LAB# 48578  
BOX# 0

Date Sampled: 9/5/2008

Date Received: 9/10/2008

Date Reported: 10/13/2008

				1ST CROP CHOICE		2ND CROP CHOICE		3RD CROP CHOICE	
				Alfalfa		Alfalfa		Alfalfa	
				YIELD GOAL		YIELD GOAL		YIELD GOAL	
				2 Tons		3 Tons		4 Tons	
				SUGGESTED GUIDELINES		SUGGESTED GUIDELINES		SUGGESTED GUIDELINES	
				Band/Maint.		Band/Maint.		Band/Maint.	
				LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	LB/ACRE	APPLICATION
Nitrate				N	0	N	0	N	0
Olsen				P <sub>2</sub> O <sub>5</sub>	20 Band *	P <sub>2</sub> O <sub>5</sub>	30 Band *	P <sub>2</sub> O <sub>5</sub>	40 Band *
Phosphorus				K <sub>2</sub> O	15 Band(Starter)*	K <sub>2</sub> O	15 Band(Starter)*	K <sub>2</sub> O	15 Band(Starter)*
Potassium				Cl		Cl		Cl	
Chloride				S	9 Band (Trial)	S	9 Band (Trial)	S	9 Band (Trial)
Sulfur				B		B		B	
Boron				Zn	0	Zn	0	Zn	0
Zinc				Fe		Fe		Fe	
Iron				Mn		Mn		Mn	
Manganese				Cu	0	Cu	0	Cu	0
Copper				Mg		Mg		Mg	
Magnesium				Lime		Lime		Lime	
Calcium				Soil pH		Buffer pH		Cation Exchange Capacity	
Sodium				8.3					
Org. Matter									
Carbonate(CCE)									
0-6" 0.28 mmho/cm									
Sol. Salts									

Crop 1: \* Caution: Seed Placed Fertilizer Can Cause Injury \* Soil Nitrogen level is estimated at 20 lbs/acre. Nitrogen is credited 50 lbs for the previous crop. Crop Removal: P2O5 = 20 K2O = 100  
AGVISE Band/Maintenance guidelines will build P & K test levels to the medium range over many years and then maintain them.

Crop 2: \* Caution: Seed Placed Fertilizer Can Cause Injury \* Soil Nitrogen level is estimated at 20 lbs/acre. Nitrogen is credited 50 lbs for the previous crop. Crop Removal: P2O5 = 30 K2O = 150  
AGVISE Band/Maintenance guidelines will build P & K test levels to the medium range over many years and then maintain them.

Crop 3: \* Caution: Seed Placed Fertilizer Can Cause Injury \* Soil Nitrogen level is estimated at 20 lbs/acre. Nitrogen is credited 50 lbs for the previous crop. Crop Removal: P2O5 = 40 K2O = 200  
AGVISE Band/Maintenance guidelines will build P & K test levels to the medium range over many years and then maintain them.

14062793757  
SHERYL GOFF

*CHS INC.*  
~~HARVEST STATES COOPERATIVES~~  
PO BOX 66  
VALIER MT 59486  
Attn: SHERYL GOFF

Date received: 12/08/08  
Date reported: 12/09/08

Customer : BIRCH CREEK COLONY  
Sample type: DRY MANURE - COMPLETE  
Sample ID : DRY 08, COW MANURE 11-30-08

Acct # 315889  
Lab number 335731

ANALYSIS	PERCENT (%)	LBS/TON
TOTAL NITROGEN	1.69	34
NITROGEN FROM AMMONIA	0.06	1
PLANT AVAILABLE NITROGEN	0.79	16
PHOSPHORUS (P2O5)	0.89	18
POTASSIUM (K2O)	3.12	63
CALCIUM	3.03	61
MAGNESIUM	0.67	14
SODIUM	0.78	16
SULFUR	0.45	9
MANGANESE		0.37
COPPER		0.13
ZINC		0.32
IRON		3.40

NOTE: Manure is reported on an as received basis.

# ANALYSIS REPORT

CENEX HARVEST STATES  
1451 8TH LANE NW  
CHOTEAU, MT 59422  
Attn: SHERYL GOFF

Date received: 06/30/08  
Date reported: 06/30/08

Customer : BIRCHCREEK COLONY  
Sample type: LIQUID MANURE - COMPLETE  
Sample ID : BIRCHCREEK LAGOON

Acct # 316757  
Lab number 306387

ANALYSIS	PERCENT (%)	LBS PER. 1000 GAL
TOTAL NITROGEN	0.27	23
NITROGEN FROM AMMONIA	0.19	16
PLANT AVAILABLE NITROGEN	0.23	19
PHOSPHORUS (P2O5)	0.08	7
POTASSIUM (K2O)	0.17	14
CALCIUM	0.08	7
MAGNESIUM	0.01	2
SODIUM	0.04	4
SULFUR	0.01	1
MANGANESE		0.07
COPPER		0.12
ZINC		0.27
IRON		0.33

NOTE: Manure is reported on an as received basis.

RECEIVED  
7-1-08  
SLC

SURE-TECH LABORATORIES

1827 8th Avenue South  
Fort Dodge, Iowa 50501  
800-205-7703

2435 Kentucky Avenue Bldg. 2  
Indianapolis, Indiana 46221  
800-266-7175 Fax: 317-243-1509

EQIP 2008 - Headquarter Facilities  
BIRCH CREEK COLONY



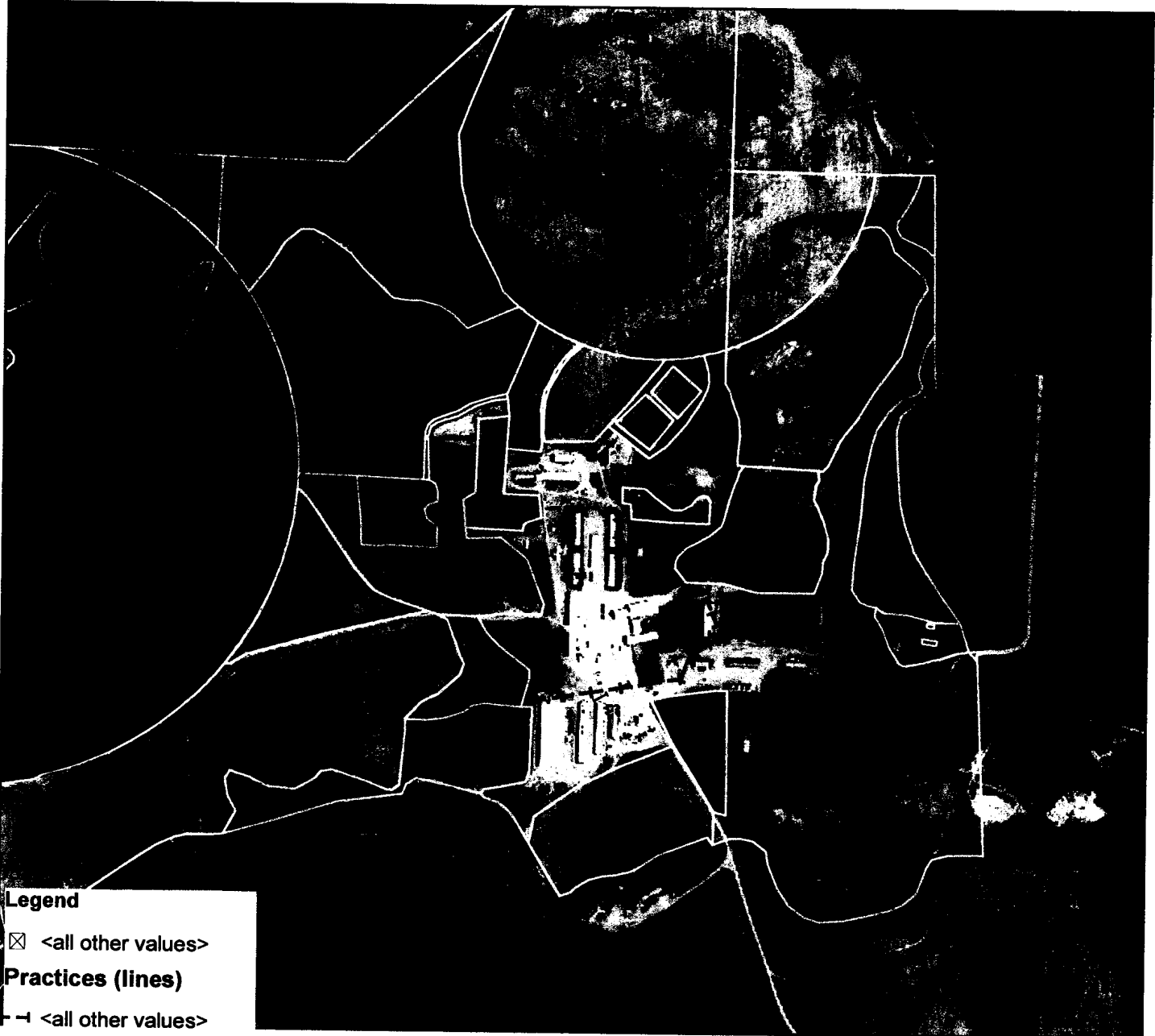
Date: 11/27/2007

Legal Description: Sections 25, 26, T.29N. R.7W.

USDA-NRCS

Conrad Field Office

Assisted By: M. Metz



**Legend**

⊠ <all other values>

**Practices (lines)**

— <all other values>

**Practice code**

— Pipeline

□ Practices (polygons)

EQIP08

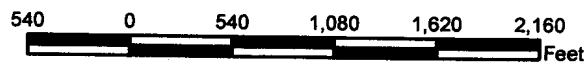
— Existing Pipeline

**DESCRIP**

Waste Separator: CI 9

**CHEMICAL STORAGE**

1 inch = 1000 ft



N





EQIP 2008  
Plan Map - Headquarter Facilities

Date: 11/27/2007

Customer(s): BIRCH CREEK COLONY

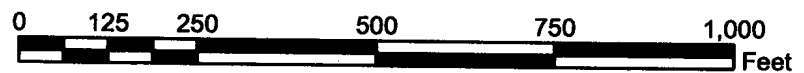
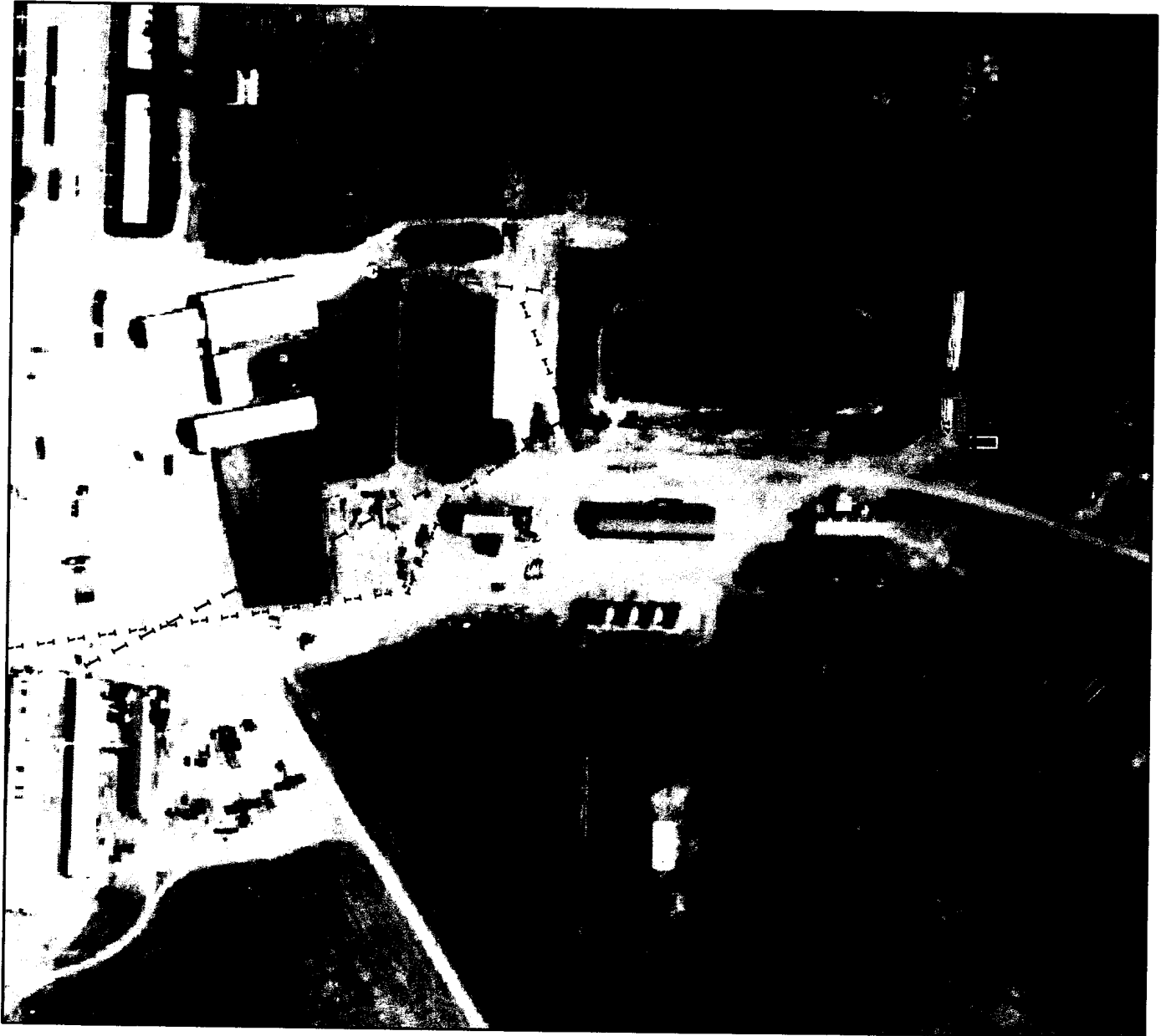
District: PONDERA COUNTY CONSERVATION DISTRICT

Field Office: CONRAD SERVICE CENTER







Agency: NRCS





Assisted By: KURT A DALMAN

Legal Description: Sections 25, 26, T.29N. R.7W.



**Legend**

-  Dry Stack: CI 1
-  Liquid Storage: CI 2
-  Composting Facility: CI 3
-  Filter Strip: CI 6
-  Waste Separator: CI 9
-  Liquid Waste Pump: CI 7

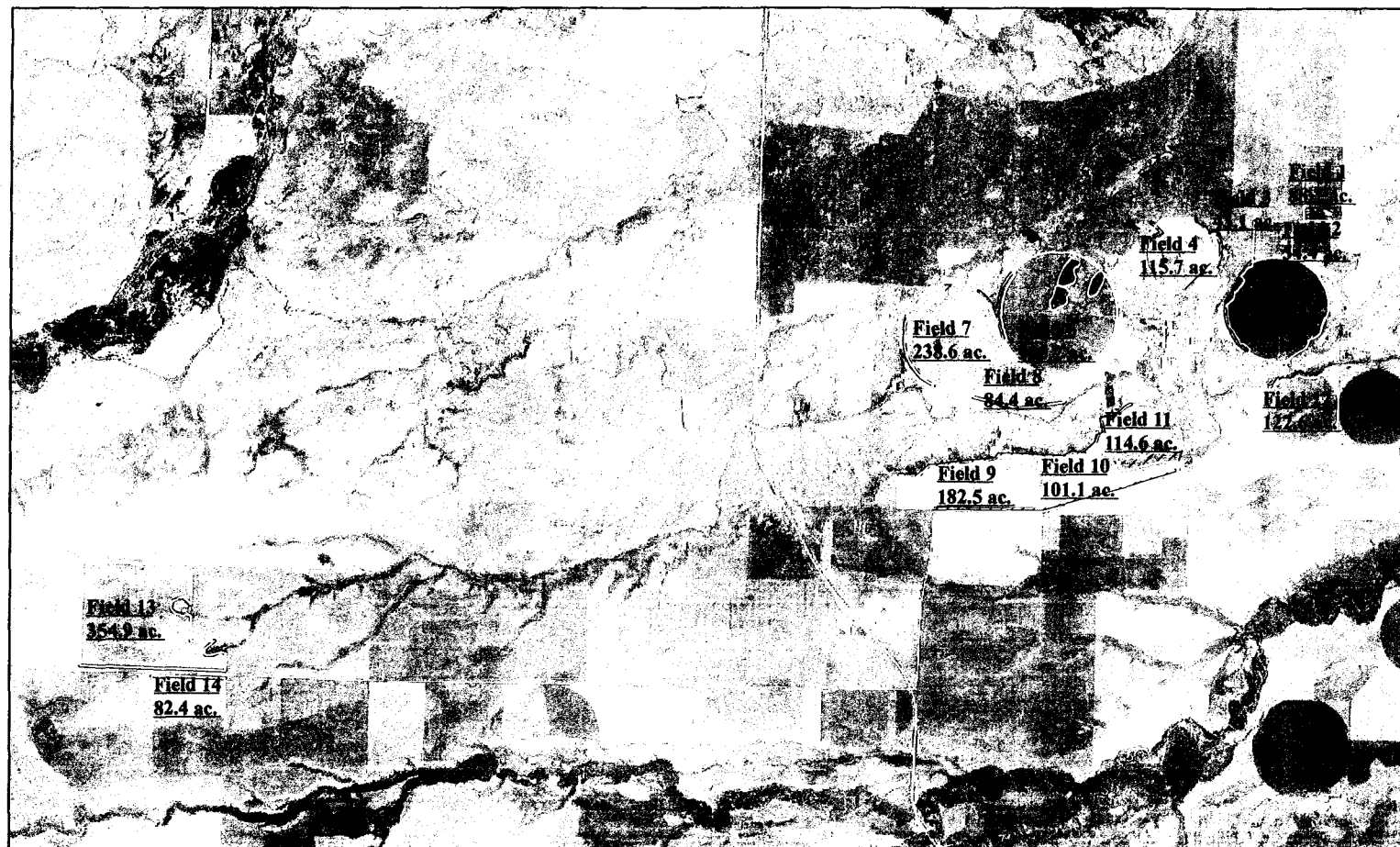
-  Diversion: CI 4
-  Fence: CI 5
-  Manure Transfer CI 11 & 14
-  Existing Pipeline



CNMP Plan Map  
**BIRCH CREEK COLONY**



USDA - NRCS  
Conrad Field Office



**Legend**

CNMP

 Setback distance 100'

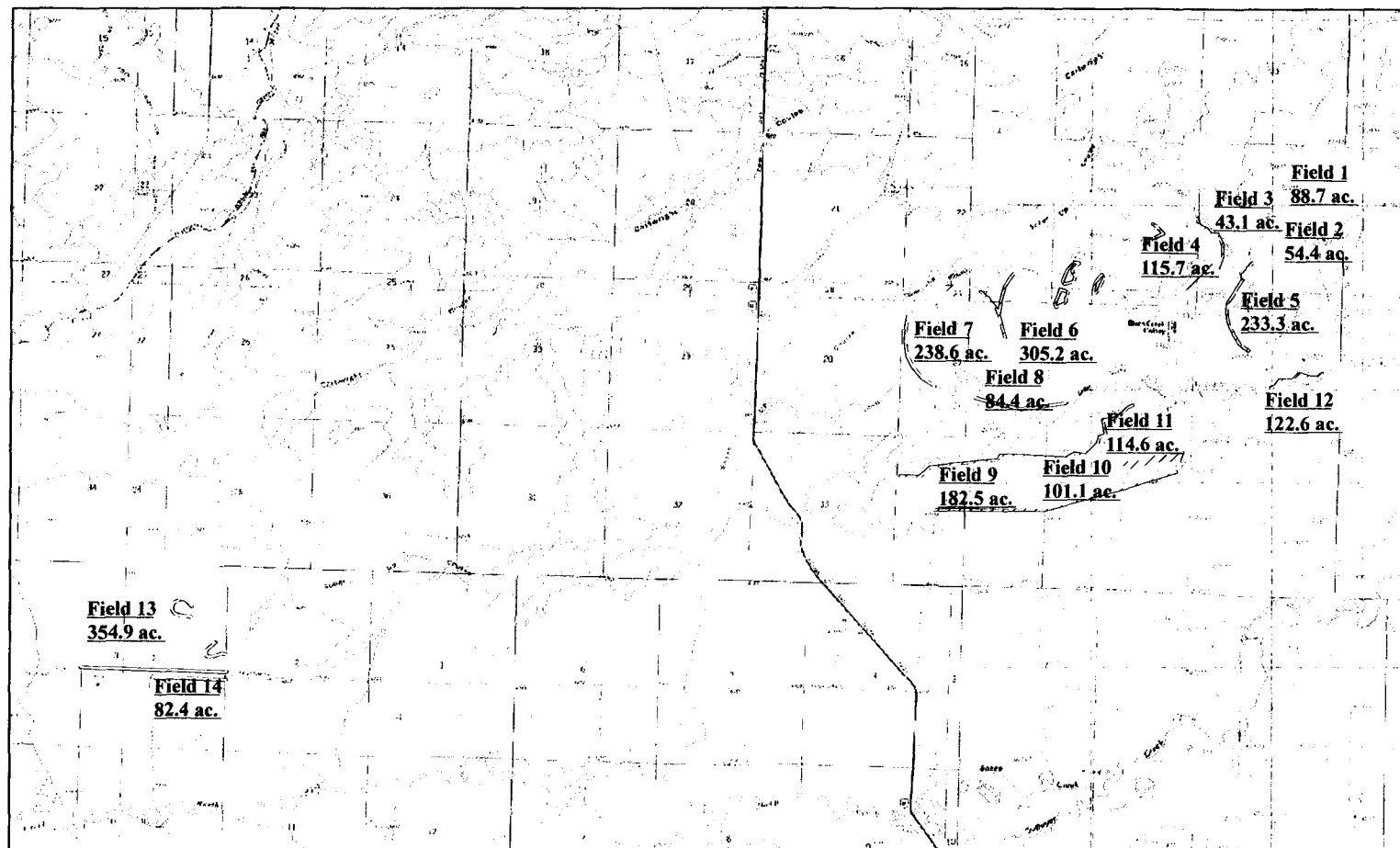
1 inch = 4000 ft



CNMP Topo Map  
**BIRCH CREEK COLONY**



USDA - NRCS  
Conrad Field Office



**Legend**

CNMP

 Setback distance 100'

1 inch = 4000 ft



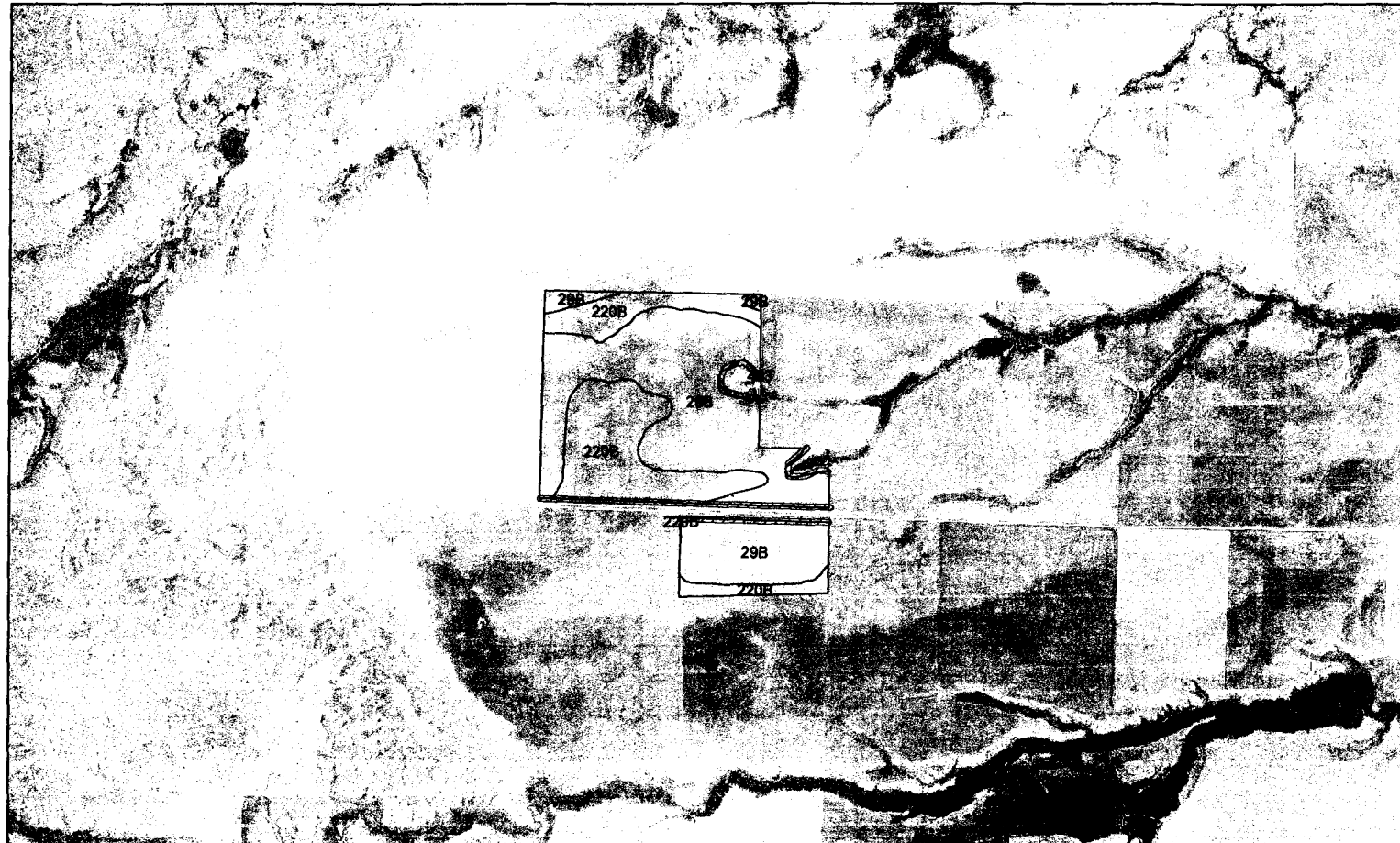
## BIRCH CREEK COLONY



CNMP Soils Map 2/2  
**BIRCH CREEK COLONY**



USDA - NRCS  
Conrad Field Office



**Legend**

- Soils Map
- CNMP
- Setback distance 100'

1 inch = 2000 ft

